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Courier Press, Leamington Spa, England.

Description

The present invention relates to an article suitable for wiping a surface, for example, the surface of a household or industrial object, or the human skin, in order to deliver an active material to that surface; or for gradually releasing an active material, such as a bubble bath composition, without surface contact. The article is in generally sheet-like form and carries an active material, for example, a detergent composition, a disinfectant, or a skin treatment material.

Various articles consisting of a substrate with a coating of a detergent or other cleansing composition have been described in the literature. For example, German Offenlegungsschrift No. 2 625 176 (Shickedanz) discloses a cleansing cloth consisting of a substrate of nonwoven fabric or wet-strength creped paper to one surface of which a pattern of detergent-active material has been applied. It is also known for such a cloth to have coatings of different detergent-active materials on different areas of the substrate, as disclosed, for example, in US Patent Specification No. 4 216 104 (Gergely). A problem that has been encountered with products of this type is that the active material is very rapidly released when the product is immersed in water, so that the product is quickly exhausted.

As well as cloths of this "open sandwich" structure there have been proposed "closed sandwich" cloths in which a layer of detergent-active material is sandwiched between two layers of substrate, as for example in German Offenlegungsschrift No. 25 49 065 (Shickedanz), in which the upper layer is of porous material in order to allow release of the detergent-active material when the cloth is immersed in water.

US Patent Specification No. 2 665 528 (Sternfeld and Block) discloses a disposable abrasive cleaning tissue in which an abrasive material, such as silica, distributed in an adhesive impregnant, is sandwiched between two layers of nonwoven fabric, which are also held together by the adhesive impregnant. Both layers of nonwoven fabric are provided with relatively large perforations in order to expose the abrasive material.

US Patent Specification No. 4 259 383 (Sterling Drug Inc) discloses a disinfecting cloth in which a dry disinfectant in powder form is held in a number of pockets or voids between two layers of tissue which are sealed together between the pockets or voids, for example, by means of adhesive or heat-sealing. The disinfectant cloth is activated by moistening with water which enters through the water-permeable substrate layers. This double layer substrate construction is not, of course, suitable for containing liquids.

FR—A—2 360 476 (Henkel) discloses a bag of plastics sheeting containing an active substance, the bag having one surface provided with slits or holes for gradual release of its contents.

The present invention provides an article carrying a releasable beneficial treatment material, the article comprising first and second carrier sheets of flexible material so bonded together so as to create a plurality of compartments therebetween, at least some of said compartments containing said releasable beneficial treatment material, characterised in that the first and second carrier sheets each comprise a layer of fibrous porous material having laminated thereto or coated thereon on their adjacent faces a layer of plastics film, the carrier sheets being bonded together by welding of the plastics film layers, the plastics film layers of one or both carrier sheets being provided with perforations in every compartment.

The beneficial treatment material included in the article of the invention, also referred to herein as "active material", includes any substance that can be delivered by means of an article according to the invention to give a benefit.

Examples of such materials include soap and detergent compositions, bleach, disinfectant, bubble bath compositions, air freshener, skin treatment agents and many more. The active material may be in any suitable form, for example a solid block, a powder, a gel, a liquid, or any combination of these.

According to an especially preferred embodiment of the invention, different compartments of the article are provided with different numbers of perforations, and/or with perforations of different sizes, so that the contents of the different compartments will be released at different rates. Thus controlled release of the active material from the article over a relatively long period may be achieved.

The absolute rate of release will of course depend on the shearing force exerted on the article during wiping. However, the presence of a spread of differently perforated compartments will always ensure a corresponding spread of relative release rates.

This embodiment is also of use for an article containing two or more active materials, when it is desired to release one active material relatively quickly and another more slowly. For example, an article for personal use in the bath or shower may contain a bubble bath composition in quick-release compartments, that is, ones with a relatively large number of perforations and/or with larger-sized perforations, and a soap or detergent composition in slower-release compartments with fewer and/or smaller perforations.

In one embodiment of the invention, the active material may be in a form, for example, a solid block, a powder or a gel, such that it will be able to leave the article only when mobilised by water or another solvent or dispersing agent. In this case the article will be activated for use by dipping in a liquid, generally water, and the liquid will enter through the perforations and dissolve or disperse out the active material, the solution or dispersion then leaving through the perforations.

In another embodiment of the invention, the active material in the article of the invention is in a relatively mobile form, such as a liquid, and the article includes means for preventing escape of the active material before the point of use.

Where the active material is a liquid of moderate to high viscosity, it is possible for the perforations to

be sufficiently small that liquid will not escape through them unless pressure is applied. Accordingly, the means for preventing escape of the active material before the point of use may simply comprise the use of sufficiently small perforations.

In the article of the invention, the carrier sheets are laminates having an inner layer of plastics film and an outer layer of porous, fibrous material. The outer surfaces of the article of softer, porous material give some absorbency and improved handling. The inner layer comprises a plastics film which can be welded (heat-sealed or ultrasonically sealed), and the outer layer preferably comprises a wet-strength paper or nonwoven fabric. Polyethylene is an especially suitable material for the inner layer.

The perforations may if desired extend right through the carrier sheet, but this is not essential provided that they penetrate through the plastics film layer.

When the active material is in mobile (liquid) form it may, as discussed above, be loose in the compartments. The feel of the article may, however, be improved if the liquid is carried in foam or sponge material or something similar inside the compartments.

It is also within the scope of the invention for a liquid active material to be protected against premature escape by some kind of encapsulation so that it is released only on the application of pressure at the time of use. The liquid may, for example, be contained in pressure-rupturable microcapsules as described, for example, in British Patent Specification No. 1 304 375 (L'Oréal). Alternatively, the liquid may be held in a highly porous polymer.

If desired, the whole article may be additionally be impregnated with the same or a different active material to that contained in the compartments.

The compartments of the article of the invention are created by welding together the plastics film layers at their edges and in a grid pattern.

The application of the active material or materials may be carried out either before or after the bonding together of the two carrier sheets, and any suitable method of application may be used. According to one preferred method of manufacture, the active material is first coated onto a first carrier sheet, and a second carrier sheet is then bonded onto the first to form a plurality of compartments. This may be carried out as a continuous process, using, for example, roller coating to apply the active material, and hot rollers to bond the two carrier sheets by heat-sealing. This method is especially suitable for articles where one active material is to be contained in all compartments, so that the active material can be applied as a continuous coating over the carrier sheet subsequent heat-sealing may be carried out through the layer of active material. It is also possible, however, for the method to be adapted for articles where different active materials are to be present in different compartments and/or some compartments are to contain no active material at all, for example, by the use of gravure rollers.

Ultrasonic sealing may be used as an alternative to heat-sealing. Alternatively it is possible first to join the carrier sheets together by heat-sealing and subsequently to introduce active materials into selected compartments, for example, by injection or pressure. The injection method also provides perforations in the same operations.

The perforations may be made at any suitable stage in the proceedings. Pre-perforated carrier sheets may if desired be used; this of course requires matching of the perforation pattern to the pattern of bonding between the substrates. Alternatively, the compartments may be perforated after the active material carrier sheet composite has been made up. In a batch process, perforation may be carried out using a syringe needle.

In a continuous process as mentioned above, the perforations may be made on one or both sides of the article, after the two carrier sheets have been bonded together, by passing the composite article over a roller carrying appropriately spaced pins.

The perforations may be as small as desired, but will generally be at least 0.01 mm in diameter, preferably at least 0.1 mm. Perforations of from 0.2 to 1.2 mm are preferred, especially from 0.5 to 1.0 mm. Of course relatively large perforations are suitable only when the active material is not very mobile or is protected as indicated previously.

The distribution of perforations depends on the size of the compartments as well as on the desired rate of release of the active material. The compartments preferably have areas ranging from 0.5 to 5 cm², more preferably from 1 to 3 cm² and especially from 1.5 to 2.5 cm². The compartments may be of any convenient shape; for ease of manufacture the bonding lines separating them are preferably straight and hence parallelogram shapes, such as square, rectangular, rhomboidal (diamond) and the like, are especially preferred.

The average distribution of perforations is advantageously less than 5/cm², and preferably lies between 0.5 and 3/cm². Practicable rates of release of most active materials can be obtained with average perforation levels within this range. Of course the distribution of perforations among the compartments may be either regular or irregular as desired.

In an embodiment of the invention, suitable for cleaning hard surfaces, one or both carrier sheets may be provided with a layer of abrasive material on its or their outer surface(s).

Preferably only one of the two carrier sheets is provided with a layer of abrasive material. The article then has one abrasive surface and one surface which has softness or absorbency. The non-abrasive side is comfortable to the hand and can if desired be used, after cleaning with the abrasive side, for rinsing, drying or polishing.

The abrasive material is advantageously particulate, a particle size of from 10 to 150 μm being preferred. Abrasives of other physical form, for example, fibres, may also be used.

For heavy duty cleaning, a relatively harsh abrasive is advantageous, for example, finely-divided calcite, finely-divided silica, or steel wool fibres. In the case of a particulate abrasive such as calcite, the particle size should be relatively low (preferably below 50 μm) to minimise scratching.

For medium and light duty cleaning, synthetic polymeric abrasive materials are especially useful. These may be in particulate or fibrous form. They provide efficient cleaning without scratching and are especially useful for cleaning non-stick cooking utensils and the like. Abrasives of this type are disclosed, for example, in US 3 382 058 (American Cyanamid Company). Preferred examples are polystyrene, polymethyl methacrylate, and, in particular, polyvinyl chloride. Since these abrasives do not scratch, larger particle sizes can be used, the range of 70 to 150 μm being advantageous.

Polyvinyl chloride particles of two average particle sizes—30 μm and 75 μm —are commercially available from British Drug Houses Ltd and the British Petroleum Company Ltd, and both grades are useful in the wipe of the invention. Desired particle sizes may be obtained by milling and sieving.

The abrasive material is preferably held onto the carrier sheet by means of an adhesive. Suitable adhesives are listed in the aforementioned US 3 382 058 and also in US 3 451 758 (Procter & Gamble) and US 3 175 331 (Union Carbide Company). The adhesive should preferably be elastic, flexible and resistant to deterioration by hot water and concentrated detergent compositions. Thermoplastic heat-curable adhesives are preferred, and especially those which at hot water temperatures are slightly softened so as to increase the flexibility of the article of the invention and thus give it improved "feel" in use; thermoplastic materials having a glass transition temperature below 50°C, preferably below 40°C and especially below 30°C, are thus preferred. Especially preferred adhesives are vinyl acetate polymers and copolymers, and thermoplastic acrylic polymers and copolymers. Polyvinyl acetate, polybutyl methacrylate, and styrene/butyl methacrylate copolymers all give good results.

The adhesive and abrasive may be applied to the substrate by any suitable method. Roller coating and screen printing both give good results; when the adhesive and abrasive are to be applied by a printing method, a thickener, for example, polyvinyl alcohol, carboxymethyl cellulose, xanthan gum or gum arabic, is advantageously added. Alternatively a solution or dispersion of the polymer adhesive containing dispersed abrasive particles may be sprayed onto the substrate and subsequently heat-cured.

If desired, the abrasive particles may be formed *in situ* on the carrier sheet by spraying on molten or dissolved polymer.

The adhesive and abrasive are advantageously applied to the carrier sheet before the composite article is made; the article can then be prepared using one abrasive-coated carrier sheet and one uncoated carrier sheet. This may be done continuously. Alternatively the finished article may be treated, preferably on one side only, with adhesive and abrasive.

Advantageously the perforations which allow release of the active material from within the compartments are made after the application of the adhesive and abrasive, to avoid the danger of blockage.

The invention will now be described in further detail, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is an isometric view of a first article according to the invention;

Figure 2 is a fragmentary section along the line II-II of Figure 1;

Figure 3 is a section, corresponding to Figure 2, of a second article according to the invention; and

Figure 4 is a schematic representation of a continuous process for the manufacture of the article of Figures 1 and 2.

Referring now to Figures 1 and 2 of the drawings, an article 1 consists of a lower carrier sheet 2 and an upper carrier sheet 3, each consisting of a layer 4 of nonwoven fabric or wet-strength paper and, laminated thereto on one side only, a thin film 5 of polyethylene. The carrier sheets 2 and 3 are so positioned with respect to one another that the polyethylene-coated sides 5 are in contact. The polyethylene layers 5 of the two carrier sheets are heat-sealed together along the edge regions 6 and also in a grid pattern 7, indicated in Figure 1 by dotted lines, to form a plurality of compartments 8, each approximately 1.3 cm x 1.3 cm, each containing a viscous liquid active material 9, for example, a concentrated bubble bath composition. Perforations 10 are provided in the upper layer 3, the numbers of perforations in each compartment varying, so that, for example, the compartment 8a will release its contents considerably more rapidly than compartment 8b when the article 1 is immersed in water. For clarity the size of the perforations 10 and the thickness of the article 1 in comparison to its surface area have been greatly exaggerated; the perforations are in fact sufficiently small that the liquid 9 will not escape through them unless the article 1 is immersed in water and/or pressure is applied.

In use the article is wetted and applied to the body during a bath or shower, the active material is released by squeezing in the hand or pressing against the body. Alternatively, additionally, for bath use, the article may be immersed in the bathwater, for example, as the bath is filled, and will gradually release its contents.

Figure 3 shows an alternative embodiment intended for hard surface cleaning; in this case the viscous liquid active material 9 is suitably a concentrated detergent composition. On the outer surface of the upper carrier sheet 3 is provided a layer of adhesive 11 in which particles of abrasive 12 are embedded. The

perforations 10 are provided only in the upper carrier sheet 3. In use the article is dipped into water and its abrasive side 3 is used to clean a soiled hard surface; active material 9 is released during this operation by squeezing. The non-abrasive side 2 may be used for a subsequent rinsing, drying or polishing operation.

Figure 4 shows a continuous method for the production of the article described above with reference to

Figures 1 and 2.

The upper carrier sheet 3 is unwound from a supply roll 13, passes around various tensioning rollers 14 and is coated with the active material 9 by a three-roll reverse coater 15. It then passes to a heat-sealing unit 16 where it is bonded both at the edges and in a grid pattern to the lower carrier sheet 2 which is unwound from a supply roll 17. The composite material 1 then passes around a cooling roller 18 to a perforating device 19 in which it is tensioned over a brush roller 20 and perforated by means of a pin-carrying roller 21. The finished composite material is then ready to be cut to size to form individual articles.

The invention is further illustrated by the following non-limiting Examples.

Example 1

Individual sachets, each 2.5 cm×2.5 cm, were made by heat-sealing together two layers of polyethylene-laminated creped paper (Gessner Duflex (Trade Mark) M3, ex Gessner & Co. GmbH, Bruckmühl, W. Germany), extrusion-coated with Alkathene (Trade Mark) 7 ex ICI: these sachets were intended to simulate the compartments of an article according to the invention. Each sachet contained a small, precisely weighed amount (in each case approximately 0.8 g) of nonionic detergent-active agent (nonyl phenol 8 EO ethoxylate). Using a syringe needle having a diameter of 0.8 mm, numbers of perforations varying from 2 to 20 were made in the various sachets.

Each sachet was then immersed in 1 litre of water at 18°C and stirred for several hours. Samples of water were taken at intervals and the UV absorbance at 276 nm was measured in order to determine the concentration of nonionic detergent-active agent released from the sachet, and hence the percentage loss of detergent-active agent from the sachet. The results are shown in the following Table.

It may be seen that a tenfold increase in the number of holes increases the release rate by a factor of approximately 15; after 30 minutes, 3% of the active material had been released from the sachet with 2 perforations, whereas just over 45% had been released from the sachet with 20 perforations.

TABLE
% of active released

Time (mins)	Number of perforations				
	2	6	8	12	20
2	0	—	10	—	13
5	0	—	21	13	—
6	0	5	—	—	—
10	0	10	28	24	32
15	0	17	—	—	—
20	0	20	34	36	40
25	1	—	—	—	—
30	3	25	36	39	47
40	10	29	39	44	55
50	13	—	—	—	—

Example 2

An article of the construction described above with reference to Figures 1 and 2 of the accompanying drawings was prepared for use as a bath or shower product. The carrier sheets each consisted of a nonwoven fabric (Storalene (Trade Mark) 610:60 ex Stora-Copparberg, consisting of 40% cotton linters, 55% viscose and 5% polyamide and having a base weight of 60 g/m²) extrusion-coated with a 20–30 µm layer of polyethylene (Alkathene (Trade Mark) 7 ex ICI). The size of the article was 30×30 cm, and the compartments were each 1.3×1.3 cm. The active material, which was present in every compartment, was a bath foam composition consisting of coconut alcohol 3 EO ether sulphate (Empicol (Trade Mark) ESB 70 ex Albright & Wilson) and coconut monoethanolamide (Empilan (Trade Mark) CME ex Albright & Wilson) in a

weight ratio of 20:1, at a total concentration of 15–25% by weight. The loading of the active material was 6 g, equivalent to 66 g/m² of substrate.

The product was pinholed such that 50% of the compartments had 10 perforations/cm² and the remaining 50% had 2.4 perforations/cm².

The product was first tested in a bath with running water, and was found to provide approximately the same volume of lather as a 25 ml dose of a commercially available liquid bath foam product (Norsca (Trade Mark) ex Elida Gibbs). The same product was then used in a hand/arm wash by a test panel and judged for ease of lather formation and ability to sustain this on repeated rinsing. The product yielded most of its active material in a controlled manner over a period of 20 to 30 minutes.

Examples 3–6

Three articles of the construction described above with reference to Figure 2 of the accompanying drawings were prepared for use as medium duty household cleaners. The carrier sheets were as specified in Example 2, and the active material, which was present in all compartments, was 12 g of a paste (50% solids content by weight) of alkylbenzene sulphonate and sodium tripolyphosphate (1:1).

To each article there was applied to one face only a particulate abrasive in a thermoplastic adhesive. The adhesives and abrasive were applied together by a screen printing technique. The three compositions used were as follows:

Example	Abrasive		Parts by weight	Adhesive (1 part by weight)
	Material	Particle size		
3	calcite: Durcal (Trade Mark) 40	40 µm	2	High-molecular weight polystyrene in toluene (10% solution)
4	"	40 µm	3	Vinyl acetate latex (ex Vinyl Products Ltd)
5	polyvinyl chloride powder (ex British Drug Houses Ltd)	75 µm	3	Butyl methacrylate (ex Vinyl Products Ltd)
6*	polystyrene powder	less than 150 µm	1	Styrene-acrylic ester-acrylic acid terpolymer (ex Vinyl Products Ltd)

*with 1 part 2% xanthan gum in water, as thickener.

The articles of Examples 3 and 4 were highly effective for cleaning heavily soiled surfaces, for example the top of a cooker. The article of Example 5, with a polymeric adhesive, could be used on nonstick cookware without scratching.

None of these articles felt harsh to the touch, and on wetting with hand-hot tap water (about 50°C) were flexible enough to be comfortably folded or crumpled in the hand for use.

Claims

1. An article carrying a releasable beneficial treatment material, said article comprising first (2) and second (3) carrier sheets of flexible material so bonded together so as to create a plurality of compartments therebetween, at least some of said compartments (8) containing said releasable beneficial treatment material, characterised in that the first and second carrier sheets (2, 3) each comprise a layer (4) of fibrous porous material having laminated thereto or coated thereon on their adjacent faces a layer (5) of plastics film, the carrier sheets (2, 3) being bonded together by welding of the plastics film layers (5), the plastics film layers (5) of one or both carrier sheets (2 or 3) being provided with perforations (10) in every compartment (8).

2. An article as claimed in claim 1, characterised in that different compartments are provided with different numbers of perforations.

3. An article as claimed in claim 1 or claim 2, characterised in that different compartments contain different active materials.

4. An article as claimed in any one of claims 1 to 3, characterised in that it contains a beneficial treatment material in liquid form.
5. An article as claimed in any one of claims 1 to 4, characterised in that it includes as beneficial treatment material a detergent composition.
6. An article as claimed in any one of claims 1 to 5, characterised in that the perforations have diameters within the range of from 0.2 to 1.2 mm.
7. An article as claimed in claim 6, characterised in that the perforations have diameters within the range of from 0.5 to 1.0 mm.
8. An article as claimed in any one of claims 1 to 7, characterised in that the distribution of perforations is within the range of from 0.5 to 3 cm².
9. An article as claimed in any one of claims 1 to 8, characterised in that the compartments have areas within the range of from 0.5 to 5 cm².
10. An article as claimed in claim 9, characterised in that the compartments have areas within the range of from 1 to 3 cm².
11. An article as claimed in any one of claims 1 to 10, characterised in that the compartments are of parallelogram shapes.
12. An article as claimed in any one of claims 1 to 11, characterised in that one or each carrier sheet carries a layer of abrasive material on its outer surface.
13. An article as claimed in claim 12, characterised in that the abrasive comprises a particulate material.
14. An article as claimed in claim 13, characterised in that the abrasive material has a particle size within the range of from 10 to 150 µm.
15. An article as claimed in any one of claims 12 to 14, characterised in that the abrasive material is a synthetic polymeric material.
16. An article as claimed in claim 15, characterised in that the abrasive material comprises polystyrene, polyvinyl chloride, or polymethyl methacrylate.
17. An article as claimed in claim 15 or claim 16, characterised in that the abrasive material is held on the carrier sheet(s) by a thermoplastic adhesive.

Patentansprüche

1. Produkt, das ein freisetzbare Material für vorteilhafte Behandlung trägt, umfassend erste (2) und zweite (3) Trägerbahnen aus flexiblem Material, so aneinander gebunden, daß eine Anzahl von Kammerndazwischen geschaffen werden, wobei wenigstens manche der Kammern (8) das freisetzbare Material für vorteilhafte Behandlung enthalten, dadurch gekennzeichnet, daß die erste und zweite Trägerbahn (2, 3) jeweils eine Schicht (4) aus faserigem, porösem Material umfaßt, auf ihren benachbarten Flächen eine Schicht (5) aus Kunststoff-Film daran laminiert oder als Überzug aufweisend, wobei die Trägerbahnen (2, 3) durch Zusammenschweißen der Kunststoff-Filmschichten (5) aneinander gebunden sind, wobei die Kunststoff-Filmschichten (5) einer oder beider Trägerbahnen (2 oder 3) mit Perforationen (10) in jeder Kammer (8) versehen sind.
2. Produkt, wie in Anspruch 1 beansprucht, dadurch gekennzeichnet, daß verschiedene Kammern mit einer unterschiedlichen Anzahl von Perforationen versehen sind.
3. Produkt, wie in Anspruch 1 oder Anspruch 2 beansprucht, dadurch gekennzeichnet, daß verschiedene Kammern verschiedene Aktivstoffe enthalten.
4. Produkt, wie in irgend einem der Ansprüche 1 bis 3 beansprucht, dadurch gekennzeichnet, daß es ein Material für vorteilhafte Behandlung in flüssiger Form enthält.
5. Produkt, wie in irgend einem der Ansprüche 1 bis 4 beansprucht, dadurch gekennzeichnet, daß es als Material für vorteilhafte Behandlung eine Detergensenzusammensetzung einschließt.
6. Produkt, wie in irgend einem der Ansprüche 1 bis 5 beansprucht, dadurch gekennzeichnet, daß die Perforationen Durchmesser im Bereich von 0,2 bis 1,2 mm haben.
7. Produkt, wie in Anspruch 6 beansprucht, dadurch gekennzeichnet, daß die Perforationen Durchmesser im Bereich von 0,5 bis 1,0 mm haben.
8. Produkt, wie in irgend einem der Ansprüche 1 bis 7 beansprucht, dadurch gekennzeichnet, daß die Verteilung der Perforationen im Bereich von 0,5 bis 3 cm² liegt.
9. Produkt, wie in irgend einem der Ansprüche 1 bis 8 beansprucht, dadurch gekennzeichnet, daß die Kammern Flächen im Bereich von 0,5 bis 5 cm² haben.
10. Produkt, wie in Anspruch 9 beansprucht, dadurch gekennzeichnet, daß die Kammern Flächen im Bereich von 1 bis 3 cm² haben.
11. Produkt, wie in irgend einem der Ansprüche 1 bis 10 beansprucht, dadurch gekennzeichnet, daß die Kammern von Parallelogram-Form sind.
12. Produkt, wie in irgend einem der Ansprüche 1 bis 11 beansprucht, dadurch gekennzeichnet, daß eine oder jede Trägerbahn eine Schicht aus Scheuermaterial auf ihrer äußeren Oberfläche trägt.
13. Produkt, wie in Anspruch 12 beansprucht, dadurch gekennzeichnet, daß das Scheuermaterial ein teilchenförmiges Material umfaßt.
14. Produkt, wie in Anspruch 13 beansprucht, dadurch gekennzeichnet, daß das Scheuermaterial eine Teilchengröße im Bereich von 10 bis 150 µm hat.

15. Produkt, wie in irgend einem der Ansprüche 12 bis 14 beansprucht, dadurch gekennzeichnet, daß das Scheuermaterial ein synthetisches polymeres Material ist.

16. Produkt, wie in Anspruch 15 beansprucht, dadurch gekennzeichnet, daß das Scheuermaterial Polystyrol, Polyvinylchlorid oder Polymethylmethacrylat umfaßt.

17. Produkt, wie in Anspruch 15 oder Anspruch 16 beansprucht, dadurch gekennzeichnet, daß das Scheuermaterial auf der/den Trägerbahn(en) von einem thermoplastischen Kleber gehalten ist.

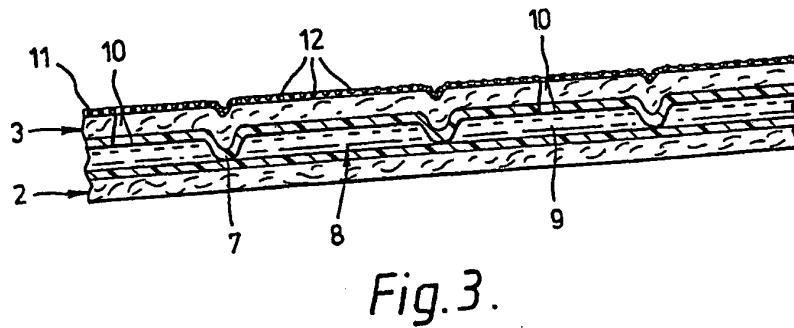
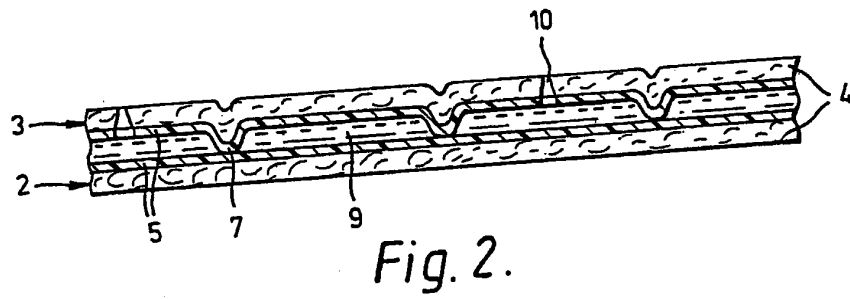
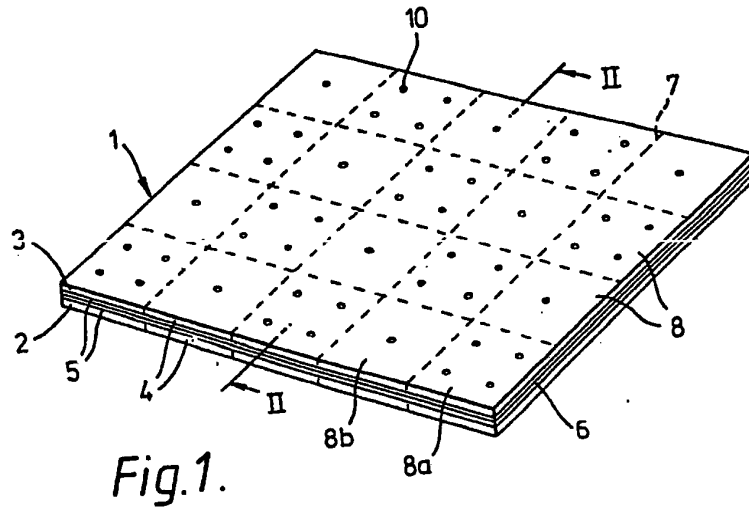
Revendications

1. Un produit comportant une matière de traitement bénéfique libérable, le dit produit comprenant une première (2) et une deuxième (3) feuilles support faites de matière flexible soudées l'une à l'autre de manière à créer une pluralité de compartiments entre elles certains de ces compartiments au moins (8) contenant la dite matière de traitement bénéfique libérable, caractérisé en ce que la première et la deuxième feuilles support (2, 3) comprennent chacune une couche (4) de matière poreuse fibreuse présentant, feuilletée ou enduite sur leurs faces adjacentes, une couche (5) de film de matière plastique, les feuilles support (2, 3) étant soudées l'une à l'autre par soudure des couches (5) de film de matière plastique, les couches (5) de film de matière plastique de l'une ou des deux feuilles support (2 ou 3) étant munies de perforations (10) dans chaque compartiment (8).
2. Un produit selon la revendication 1, caractérisé en ce que différents compartiments sont munis d'un nombre de perforations différent.
3. Un produit selon la revendication 1 ou 2, caractérisé en ce que différents compartiments contiennent différentes matières actives.
4. Un produit selon l'une quelconque des revendications 1 à 3, caractérisé en ce qu'il contient une matière de traitement bénéfique sous forme liquide.
5. Un produit selon l'une quelconque des revendications 1 à 4, caractérisé en ce qu'il contient comme matière de traitement bénéfique une composition détergente.
6. Un produit selon l'une quelconque des revendications 1 à 5, caractérisé en ce que les perforations ont des diamètres de l'ordre de 0,2 à 1,2 mm.
7. Un produit selon la revendication 6, caractérisé en ce que les perforations ont des diamètres de l'ordre de 0,5 à 1,0 mm.
8. Un produit selon l'une quelconque des revendications 1 à 7, caractérisé en ce que la distribution des perforations est de l'ordre de 0,5 à 3/cm².
9. Un produit selon l'une quelconque des revendications 1 à 8, caractérisé en ce que les compartiments ont des surfaces de l'ordre de 0,5 à 5 cm².
10. Un produit selon la revendication 9, caractérisé en ce que les compartiments ont des surfaces de l'ordre de 1 à 3 cm².
11. Un produit selon l'une quelconque des revendications 1 à 10, caractérisé en ce que les compartiments ont des formes de parallélogrammes.
12. Un produit selon l'une quelconque des revendications 1 à 11, caractérisé en ce que l'une des feuilles support ou chacune des feuilles support comporte une couche de matériau abrasif sur sa surface externe.
13. Un produit selon la revendication 12, caractérisé en ce que l'abrasif comprend un matériau particulaire.
14. Un produit selon la revendication 13, caractérisé en ce que le matériau abrasif a une granulométrie de l'ordre de 10 à 150 µm.
15. Un produit selon l'une quelconque des revendications 12 à 14, caractérisé en ce que le matériau abrasif est un matériau polymère synthétique.
16. Un produit selon la revendication 15, caractérisé en ce que le matériau polymère comprend du polystyrène, du polychlorure de vinyle ou du polyméthacrylate de méthyle.
17. Un produit selon la revendication 15 ou 16, caractérisé en ce que le matériau abrasif est maintenu sur la (les) feuille(s) support par un adhésif thermoplastique.

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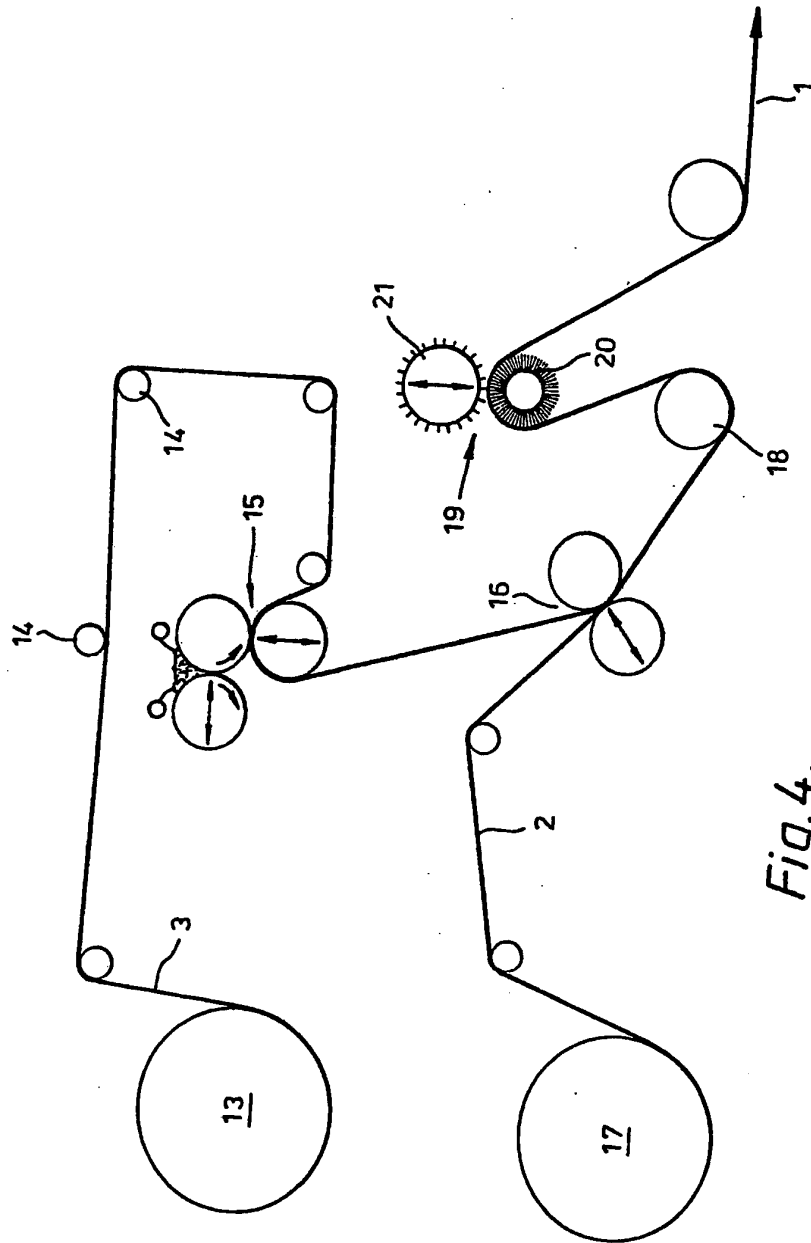


Fig. 4.